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FACSIMILE COVER LETTER

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NAME: Examiner B. Kebede Art Unit: 2823

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FROM: James H. Walters

WE ARE TRANSMITTING A TOTAL OF 7 PAGES
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DATE: October 19, 2004 TIME: 605P

Our ref: A-382WOC Your ref: 09/716,843

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Enclosed please find a reply brief in response to the Answer of August 19, 2004 and the certificate of facsimile transmission.

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James H. Walters
Reg. No. 35,731

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
Before the Board of Patent Appeals and Interferences

In re Application of	Confirmation No.: 8226
Kouichi IKEDA et al	Art Unit: 2823
S. N. 09/716,843	Examiner: B. Kebede
Filed: November 17, 2000	

For: SEMICONDUCTOR DEVICE AND METHOD FOR MANUFACTURING THE SAME

REPLY BRIEF ON BEHALF OF APPELLANT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the Examiner's answer mailed August 19, 2004, applicant respectfully submits this reply brief.

In the answer, the Examiner states that Cockerill et al teach dividing in to groups of 4, but if groups of 4 are not possible, dividing into groups of 2, and if groups of 2 are not possible, dividing into groups of 1.

Applicant respectfully submits that Cockerill et al do not teach this. Refer to column 4, lines 51-62 of Cockerill et al. Here, Cockerill et al show that they do not make any determination of if a group of 4 is not possible, then dividing into groups of 2, and if that is not possible, into single chips.

Cockerill et al show in this section referred to that they are merely dividing into a preselected group size, without any determination as to first seeing if 4 are possible, and then if not 4, 2, and if not 2, then 1.

Cockerill et al state as an alternative to dividing into groups of 1x4 that

> instead of dividing the electronic module into four "chip columns" (1x1) modules as above, a 1x4 module could be divided into a 1x1 and a 1x3 module." (Cockerill et al, column 4, lines 53-56)

This shows that Cockerill et al are still going to divide into groups of 4, but split that group of 4 into a one and a three size element. This shows that Cockerill et al are not concerned with and do not appreciate applicant's claimed invention where a test is made to see if a group of 4 is possible, and if 4 is not possible, then a group of 2, and if 2 is not possible, then groups of 1. Cockerill et al don't teach this and don't suggest it. If they were teaching or suggesting what applicant claims, then why does Cockerill et al discuss that groups of 4 are split into a 1 and a 3 element?

Further, Cockerill et al go on to state:

> Alternately, it could be divided into two 1x2 modules. . . . if two 1x2 modules were to be formed from a 1x4 module, each 1x2 module

would be identically and individually interconnected by the side metallization pattern applied to the 1x4 module. (Cockerill et al, column 4, lines 58-62).

This does not teach applicant's if it is determined that a group of 4 is not possible, then making a group of two, etc. In each of the cases here where Cockerill et al talk about dividing into smaller than 4 size pieces, Cockerill et al explicitly assume that the group of 4 here is fully functional, because they are splitting a group of 4 into 2 groups of 2, or into a group of 1 and a group of 3. Both cases presume that all 4 chips of a column are useful and useable. This is different than what applicant is claiming, and it does not teach what applicant is claiming. Cockerill et al assume that the entire group of 4 is fine. They do not address what they would do if the entire group of 4 is not fine.

The Examiner shows FIG. 6 and FIG. 7 of Cockerill et al and concludes that therefore the claims are shown. It is worth noting that the text portions quoted by the Examiner on the bottom of Page 8 of the answer all discuss only a 1x4 array. There is nothing in the cited portion of Cockerill et al that teaches applicant's claims. Cockerill et al want a 1x4 array, and then subdivide it into either two 2x2 arrays or a 1x1 and a 1x3 array. The FIG. 7 illustrates a use for the chips once they

have been cut, wherein stacks of chips are assembled to make a chip assembly. FIG. 7 of Cockerill at al has nothing to do with deciding how the cutting is done and lends nothing to teach cutting into groups of 4 but if 4 is not possible cutting into groups of 2, but if two is not possible, cutting into groups of one.

Note that the portion of Cockerill et al cited in the page 8 quote states that the map is used "together with information regarding the dimension of the planar arrays of IC chips required (see, for example, the 1x4 array of FIG. 2) . . .

This shows that Cockerill et al are looking for a certain dimension of planar array chips. It does not teach what applicant is claiming. It is applicant who provides the teaching to first try to divide into 4, and if 4 is not possible, to try to divide into groups of 2, and if 2 is not possible, to divide into groups of 1. Cockerill et al assume a group of 1x4 is what is desired, and make the dicing map based on that. Then, if smaller pieces are desired, Cockerill et al subdivide a 1x4 piece into either two 2x2 pieces or into a 1x1 and a 1x3 piece. There is nothing that Cockerill et al teach that shows what applicant is claiming.

On page 9 of the answer, the Examiner states that applicant's argument is not commensurate with the scope of the

claims. Applicant disagrees. Applicant's claims clearly teach trying to divide into groups of 4, but if 4 is not possible then trying to divide into groups of 2, but if 2 is not possible then groups of 1 pieces. Applicant submits that this teaches trying to divide into the largest size possible (selected from 4, 2 or 1). The Examiner says it does not, but applicant cannot understand how that can be said. Clearly such an argument is commensurate with the scope of the claims.

The Examiner states on page 10 of the Answer that "Cockerill et al. '237 discloses dicing pattern of the wafer into four-pieces of chips together (1x4), into three-pieces of chips together (1x3), into two-pieces of chips together (1x2) or a sing-piece of chip (1x1) according to the test result."

This is not correct. Nowhere does Cockerill state that it dices into 1x4, 1x3, 1x2 or 1x1 based on the result of a test of the chip function. Cockerill et al teach that a 1x4 piece might be subdivided into 1x3 and 1x1 or into two 2x2 pieces. Cockerill et al assume that a 1x4 piece is there and is fully functional prior to this dividing. Applicant has referred to the portions of Cockerill et al above in this reply to show this point. See Cockerill et al column 4, lines 51-62, where it is taught that the 1x4 module can be divided into 1x1 and 1x3 or 2x2 and 2x2. This presumes that the 1x4 is fully functional. This does not

state that the division being made is based on the testing. It is being made based on the desire to have a smaller size chip made from a larger array, all assumed to be functional.

It is respectfully requested that the rejections be overturned and that the claims be allowed.

Respectfully submitted,

James H. Walters, Reg. No. 35,731

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